

What is claimed is:

1. A compound, comprising:
a nanocomposite selected from the group consisting of
 - (a) thermoplastic matrix polymer, nanoclay, and compatibilizing dispersion agent having a weight ratio of nanoclay to compatibilizing dispersion agent of less than 2.2:1 and greater than 1:1.9, and
 - (b) thermoplastic matrix polymer, nanoclay, and compatibilizing dispersion agent having a weight ratio of nanoclay to compatibilizing dispersion agent of greater than 3.1:1 and less than 10:1.
- 10 2. The compound of Claim 1, wherein the nanocomposite further comprises a polyolefin elastomer.
- 15 3. The compound of Claim 1 or Claim 2, wherein the nanocomposite further comprising ingredients selected from the group consisting of colorants, nucleators, blowing agents, activators which lower the activation temperature of the blowing agent, surfactants, plasticizers, stabilizers, flame retardants, UV absorbers, fillers, fragrances, mold release aids, processing aids, biocides, antistatic additives, anti-microbial agents, lubricants, and combinations of them.
- 20 4. The compound of Claim 1 or Claim 2 or Claim 3, wherein the nanoclay comprises at least 9 weight percent of the nanocomposite.
- 25 5. The compound of any of Claims 1-4, wherein the compound further comprises a thermoplastic polyolefin mixed with the nanocomposite.
6. An article made from the compound of any of Claims 1-5.

7. A method of using the compound of Claim 5, comprising the step of mixing the nanocomposite of any of Claims 1-4 with a thermoplastic polyolefin at a point of molding or extruding a final thermoplastic article.

5 8. The method of Claim 7, wherein the mixing step occurs at a ratio of about 4:1 of thermoplastic polyolefin to nanocomposite.

10 9. A method of using the compound of Claim 4, comprising the step of pelletizing the nanocomposite for further processing.

10 10. The method of Claim 9, wherein the further processing is molding or extruding the nanocomposite into a shape of an article.

15 11. A method of making a compound of any of Claims 2-4, comprising the steps of

(a) adding the thermoplastic matrix polymer, nanoclay, and nanoclay dispersion agent to an extruder; and

(b) adding the polyolefin elastomer downstream from where the thermoplastic matrix polymer, nanoclay, and nanoclay dispersion agent were added.

20 12. The method of Claim 11, wherein step (a) also includes adding ingredients selected from the group consisting of colorants, nucleators, blowing agents, activators which lower the activation temperature of the blowing agent, surfactants, plasticizers, stabilizers, flame retardants, UV absorbers, fillers, fragrances, mold release aids, processing aids, biocides, antistatic additives, anti-microbial agents, lubricants, and combinations of them.